

# Notice of Allowability

Application No.

10/527,621

Examiner

Guy G. Anderson

Applicant(s)

DEMIGUEL ET AL.

Art Unit

2883

## -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to a telephone interview with applicants attorney on June 28, 2007.
2. ☒ The allowed claim(s) is/are 1-20.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All b) ☐ Some\* c) ☐ None of the:
    1. ☒ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

### Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),  
Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material

5. ☐ Notice of Informal Patent Application

6. ☒ Interview Summary (PTO-413),  
Paper No./Mail Date 6/28/07
7. ☐ Examiner's Amendment/Comment

8. ☒ Examiner's Statement of Reasons for Allowance

9. ☐ Other \_\_\_\_\_

  
BRIAN HEALY  
PRIMARY PATENT EXAMINER

### EXAMINER'S AMENDMENT

- 1.1 An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.
- 1.2 Authorization for this examiner's amendment was given in a telephone interview with Walter Grollitsch on June 28, 2007.

### IN THE CLAIMS:

Please enter the claims as follows:

1. (Previously Presented) A monolithic optical component comprising:  
a light-absorbing layer,  
a waveguide coupled evanescently with the said light-absorbing layer, such waveguide having one end coupled with an input face of the component to receive an input wave, and the component being characterized in that the input face is convex.
2. (Currently Amended) The optical component according to claim 1, wherein the input face has the shape of a [cylindrical] convex diopter with generators perpendicular to the plane of the light-absorbing layer.
3. (Currently Amended) The optical component according to claim 2, wherein the radius of curvature of the [cylindrical] convex diopter is of the order of 20  $\mu\text{m}$ .
4. (Previously Presented) The optical component according to claim 1, further comprising a photodiode incorporating the light-absorbing layer.
5. (Previously Presented) The optical component according to claim 1, wherein the waveguide is a diluted waveguide.
6. (Previously Presented) The optical component according to claim 1, wherein the waveguide comprises at least:  
a first InP layer,  
an InGaAsP layer deposited on the first InP layer, and  
a second InP layer deposited on the InGaAsP layer.
7. (Previously Presented) The optical component according to claim 1, wherein the shape of the input face is formed by an etching process.

Art Unit: 2883

8. (Currently Amended) The optical component according to claim 2, wherein the [cylindrical] convex diopter shape of the input face is formed by utilizing a deposition of materials and a photosensitive resist.
9. (Previously Presented) The optical component according to claim 7, wherein the deposition of materials comprises a layer of silicon nitride.
10. (Previously Presented) The optical component according to claim 7, wherein the deposition of materials comprises a layer of silicon dioxide.
11. (Previously Presented) A monolithic optical component comprising:  
a photodiode; and  
a waveguide coupled evanescently to the photodiode via a light-absorbing layer, the waveguide having one end coupled with an input face that is configured to receive an input wave, wherein the input face is convex.
12. (Previously Presented) The optical component according to claim 11, wherein the shape of the input face is formed by an etching process.
13. (Currently Amended) The optical component according to claim 11, wherein the input face has the shape of a [cylindrical] convex diopter.
14. (Currently Amended) The optical component according to claim 11, wherein the [cylindrical] convex diopter shape of the input face is formed by utilizing a deposition of materials and a photosensitive resist.
15. (Previously Presented) The optical component according to claim 11, wherein the waveguide is a diluted waveguide.
16. (Currently Amended) A monolithic optical component comprising:  
a photodiode; and  
a waveguide coupled to the photodiode via a light-absorbing layer, the waveguide having one end coupled with an input face that is configured to receive an input wave, wherein the input face is formed by utilizing a deposition of materials and a photosensitive resist such that the input face has a shape of a [cylindrical] convex diopter.
17. (Previously Presented) The optical component according to claim 16, wherein the waveguide comprises an InP layer and an InGaAsP layer.
18. (Previously Presented) The optical component according to claim 17, wherein the InGaAsP layer has a thickness of 0.16  $\mu\text{m}$ .

Art Unit: 2883

19. (Currently Amended) The optical component according to claim 16, wherein the [cylindrical] convex diopter is a convex convergent ~~eylindrieal~~ diopter.

20. (Previously Presented) The optical component according to claim 16, wherein the waveguide is a diluted waveguide.

***Response to Amendment***

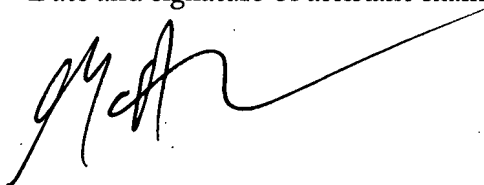
***Allowable Subject Matter***

- 2.1 The following is an examiner's statement of reasons for allowance:  
Claims 1, 11 and 16 are allowed for the following reason/s:  
The instant application is deemed to be directed towards a non-obvious improvement over the invention patented in U.S. Patent No. U.S. Patent No. 5,513,196 to Bischel and U.S. patent No. 6,646,317 to Takeuchi.
- 2.2 Claims 1, 11 and 16 are allowed because the prior art of record, taken alone or in combination, fails to disclose or render obvious a monolithic optical component comprising a light absorbing layer and waveguide evanescently coupled to said light absorbing layer, wherein the waveguide has an input facet to receive an input light wave wherein the input face is convex in shape.
- 2.3 Claims 2-10, 12-15, 17-20 are dependant either directly or indirectly upon claims 1, 11 and 16 and are therefore also allowable.
- 2.4 Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."
- 2.5 Any inquiry concerning this communication or earlier communications from the examiner should be directed to Guy G. Anderson whose telephone number is 571.272.8045. The examiner can normally be reached on Tuesday-Saturday 0900-2200.
- 2.6 If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank Font can be reached on 571.272.2415. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2883

2.7 Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

2.8 Date and signature of assistant examiner.



June 29, 2007



**BRIAN HEALY**  
**PRIMARY PATENT EXAMINER**